General

Guideline Title

Atherosclerotic cardiovascular disease screening in adults: American College of Preventive Medicine position statement on preventive practice.

Bibliographic Source(s)

Lim LS, Haq N, Mahmood S, Hoeksema L, ACPM Prevention Practice Committee, American College of Preventive Medicine. Atherosclerotic cardiovascular disease screening in adults: American College of Preventive Medicine position statement on preventive practice. Am J Prev Med. 2011 Mar;40(3):381.e1-10. [55 references] PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Screening for Coronary Heart Disease (CHD)

For asymptomatic men and women with no history of CHD or CHD risk equivalents (established forms of atherosclerotic diseases including abdominal artery aneurysm (AAA), peripheral artery disease (PAD), and symptomatic carotid artery disease), the American College of Preventive Medicine (ACPM) recommends the use of a CHD risk assessment tool such as the Framingham Risk Score (FRS) to assess CHD risk and to guide risk-based therapy. Individuals with a high (>20% for 10-year) risk of CHD benefit from intensive risk factor modification (e.g., lipid-lowering, blood pressure–lowering therapies), and appropriate chemoprophylaxis (e.g., aspirin, statin therapy).

ACPM does not recommend routine screening of the general adult population using electrocardiogram (ECG), exercise treadmill testing (ETT), electron-beam computed tomography (EBCT), ankle–brachial index (ABI), carotid intima medial thickness (IMT), or emerging risk factors including high-sensitivity C-reactive protein (hs-CRP). However, ACPM recognizes that hs-CRP appears to contribute to CHD risk assessment independent of traditional risk factors and has the potential to guide intensity of risk-reducing therapies in selected people. Therefore, clinicians who identify patients having an intermediate (10%–20% over 10 years) risk of CHD should consider hs-CRP testing to determine the need for intensification of therapy or pharmacotherapy (e.g., statins). However, the net benefit of such therapy based on this strategy is unclear because of lack of data.

Screening for Carotid Artery Stenosis (CAS)

ACPM does not recommend routine screening of the adult population for asymptomatic CAS. Although stroke is a leading cause of mortality and morbidity, a relatively small proportion of disabling and unheralded strokes is due to CAS. Duplex ultrasonography has moderate sensitivity and specificity for detecting severe CAS but may yield false-positive results that could lead to unnecessary and potentially invasive testing (e.g.,

angiography) with adverse consequences. Although carotid endarterectomy (CEA) decreases the risk of stroke among study participants with asymptomatic CAS, the effect of treating CAS in populations screened for CAS is uncertain because of lack of studies. Further, the benefits of CEA are expected to be less among asymptomatic individuals in the general population compared to study participants. The authors agree with the United States Preventive Services Task Force (USPSTF) that for individuals with asymptomatic CAS there is moderate certainty that the benefits of screening do not outweigh the harms.

Screening for Peripheral Artery Disease (PAD)

The authors agree with the USPSTF that screening for PAD among asymptomatic adults in the general population is expected to have few or no benefits because of the low prevalence of PAD in this group. There is also little evidence that treatment of PAD at this asymptomatic stage of disease, beyond treatment based on standard cardiovascular risk assessment, improves health outcomes. Most of the literature on PAD pertains to treatment of symptomatic patients, and there is little data directly examining the efficacy of PAD screening among asymptomatic adults in the general population or in higher-risk adults.

Existing evidence supports the use of increased physical activity and smoking cessation to improve outcomes among people with early PAD. However, these interventions should be offered to all patients to encourage healthy lifestyles, and do not necessarily offer additional benefit for people with screen-identified PAD. Finally, screening asymptomatic adults with the ABI could potentially lead to some small degree of harm, including false-positive results and unnecessary workups. Therefore, the potential harms associated with routine PAD screening in asymptomatic adults would exceed the potential benefits.

ACPM does not recommend routine screening for asymptomatic PAD in the general adult population. However, clinicians should be alert to symptoms of PAD in people at increased risk (e.g., people aged >50 years, smokers, and individuals with diabetes) and evaluate patients who have clinical evidence of vascular disease. Therapeutic lifestyle changes including a heart-healthy diet, regular exercise, and smoking cessation should be encouraged in addition to other pharmacologic risk reduction strategies for individuals at risk for PAD.

Screening for Abdominal Aortic Aneurysms (AAA)

AAAs are an important medical issue especially in groups in which the prevalence is high, namely, men aged >65 years who have ever smoked. Ruptured AAAs are often catastrophic events. Ultrasonography is a safe, noninvasive, reliable screening test that can identify AAAs and allow clinicians to take the necessary steps to substantially decrease the morbidity and mortality associated with AAAs.

The ACPM agrees with the recommendations of the USPSTF for one-time screening in men aged 65–75 years who have ever smoked. The College does not currently recommend routine screening in women because it has not been shown to provide any benefit in relation to AAA-related mortality or in decreasing the incidence of ruptured AAAs.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Atherosclerotic cardiovascular diseases, including:

- Coronary heart disease (CHD)
- Carotid artery stenosis (CAS)
- Peripheral artery disease (PAD)
- Abdominal aortic aneurysm (AAA)

Guideline Category

Counseling

Prevention

Risk Assessment

Screening

Clinical Specialty

Cardiology

Family Practice

Internal Medicine

Preventive Medicine

Intended Users

Physician Assistants

Physicians

Guideline Objective(s)

To outline the American College of Preventive Medicine's perspective on critical preventive medicine issues, in a timely fashion, in order to exert a positive influence on policy, practice, and research dealing with coronary heart disease (CHD), carotid artery stenosis (CAS), peripheral artery disease (PAD), and abdominal aortic aneurysm (AAA) screening in the adult population

Target Population

Adults in the United States who are at risk for cardiovascular disease

Interventions and Practices Considered

1. Coronary heart disease (CHD) risk assessment
    - Framingham Risk Score (FRS)
    - High sensitivity C-reactive (hs-CRP) testing in higher-risk patients
2. Peripheral arterial disease screening in patients with increased risk (not recommended for asymptomatic adults in the general population)
3. Ultrasound screening for asymptomatic carotid artery stenosis (not recommended)
4. Ultrasound screening for abdominal aortic aneurysms in male patients with increased risk (not recommended for women)
5. Counseling for therapeutic lifestyle changes (heart-healthy diet, regular exercise, and smoking cessation)

Note: Electrocardiogram (ECG), exercise treadmill test (ETT), electron-beam computed tomography (EBCT), ankle–brachial index (ABI), and carotid intima medial thickness (IMT) were considered but not recommended for routine screening of CHD.

Major Outcomes Considered

- Mortality from atherosclerotic cardiovascular disease (ASCVD)
- Specificity and sensitivity of screening tests
- Incidence of cardiovascular events with lifestyle modification
- Incidence of cardiovascular events with and without pharmacologic intervention
- Incidence of perioperative death from invasive intervention
- Side effects of pharmacotherapy

- Cost effectiveness of ASCVD intervention

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

PubMed was searched for current guidelines and studies dating prior to July 2010. The following search terms were used:

- Atherosclerotic cardiovascular diseases
- Coronary heart disease (CHD)
- Carotid artery stenosis (CAS)
- Peripheral artery disease (PAD)
- Abdominal aortic aneurysm (AAA)

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review

Review of Published Meta-Analyses

Description of the Methods Used to Analyze the Evidence

Current guidelines and studies pertaining to coronary heart disease (CHD), carotid artery stenosis (CAS), peripheral artery disease (PAD), and abdominal aortic aneurysm (AAA) screening in the adult population were reviewed.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

- Cost effectiveness of carotid endarterectomy (CEA) in older adults with asymptomatic carotid artery stenosis (CAS) has not been proven.
- According to a 2007 study, at 7-year follow-up, the cost effectiveness of abdominal aortic artery (AAA) screening was estimated to be $19,500 per life-year gained based on mortality related to AAAs and $7600 per life-year gained based on mortality from all causes.

Method of Guideline Validation

Comparison with Guidelines from Other Groups

Description of Method of Guideline Validation

The guidelines from the following major professional and health organizations were used for comparison of recommendations on atherosclerotic cardiovascular disease screening:

United States Preventive Services Task Force
American College of Cardiology Foundation/American Heart Association
Society for Vascular Surgery
National Cholesterol Education Program, Adult Treatment Panel III
Screening for Heart Attack Prevention and Education (SHAPE) Task Force
American Diabetes Association
Society of Interventional Radiology

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is not specifically stated for each recommendation.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Reduction in morbidity and mortality from atherosclerotic cardiovascular disease

Potential Harms

Potential harms associated with using CHD screening tests include the risk of radiation exposure through the use of electron beam computed tomography (EBCT); potential for false positives and labeling, which may result in unnecessary psychological distress and invasive testing (e.g., coronary angiography) with its associated morbidity and mortality; and side effects of aggressive risk-reduction therapies (e.g., lipid-lowering agents).

Qualifying Statements

Qualifying Statements

The American College of Preventive Medicine (ACPM) Prevention Practice Committee coordinates the development of practice policy statements on preventive health care to provide guidance to clinicians and healthcare organizations. These position statements are brief summaries of ACPM viewpoints on important topics that have already been the focus of an evidence review, analysis, and recommendations by one or more entities outside of ACPM. For example, particular subjects for which the U.S. Preventive Services Task Force has developed recommendations are typically suitable topics for position statements (www.ahrq.gov/clinic/uspstfix.htm). The purpose of the position statements is to outline the ACPM's perspective on critical preventive medicine issues, in a timely fashion, in order to exert a positive influence on policy, practice, and research dealing with the subject of the statement.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Mar

Guideline Developer(s)

American College of Preventive Medicine - Medical Specialty Society

Source(s) of Funding

American College of Preventive Medicine

Guideline Committee

American College of Preventive Medicine Prevention Practice Committee

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

No financial disclosures were reported by the authors of this paper.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the American College of Preventive Medicine Web site .

Print copies: Available from ACPM, 1307 New York Ave, N.W., Suite 200, Washington, DC 20005-5603.

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on January 13, 2011. The information was verified by the guideline developer on January 30, 2012. This summary was updated by ECRI Institute on April 13, 2012 following the U.S. Food and Drug Administration advisories on Statin Drugs and Statins and HIV or Hepatitis C drugs.

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